



**Microgravity Science Division
Acceleration Measurement Program
Glenn Research Center**

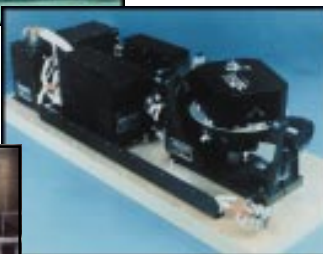
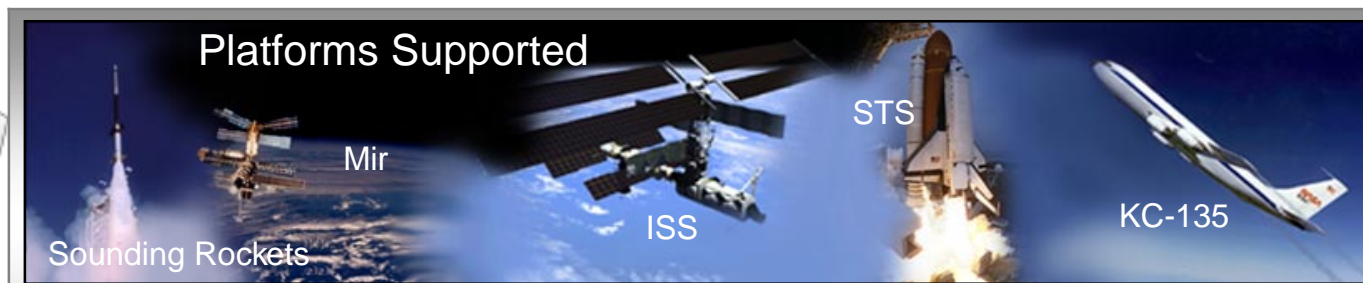


Acceleration Measurement Program Overview

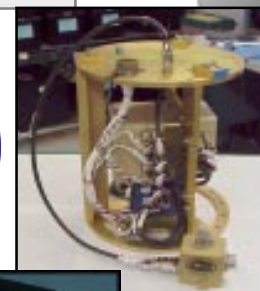
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Microgravity Science Division Acceleration Measurement Program Glenn Research Center



Microgravity
Emission Lab



Science Supported

Combustion

Fluid Physics

Fundamental Physics

Materials

Vehicle Dynamics

Biotechnology



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Acceleration Measurement Program - GRC

- **Space Acceleration Measurement System(s) (SAMS) Development**

- Supports PIs by mapping acceleration environment on multiple platforms:
Ground based (KC-135 & Drop Towers), Sounding Rockets, STS, Mir and ISS

- Missions supported on Sounding Rockets, STS, Mir

- **Mapped (flown) 20+ flights on STS & Mir**

- SAMS-Mir flight unit recovered by STS-91 after 45 months on Mir.
- SAMS-FF - Supported Hubble on STS 95, Terrier Orion Sounding Rocket - 1999

- **OARE - Low frequency measurement System flown 10 times on STS**

- Hardware Development for International Space Station

- **SAMS- II - The Acceleration Measurement System for mapping acceleration environment on ISS (payloads and vehicle)**

- Scheduled launch 6A
- First component delivered to ISS program 8/99

- **MAMS - Microgravity Acceleration Measurement System - Low frequency measurement system for ISS (payloads and vehicle) - 6A launch**



SAMS on STS



SAMS II - ISS



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Acceleration Measurement Program - GRC

- **PIMS - PI Microgravity Services** - These include services such as data analysis, logging and tracking of ancillary information pertinent to the microgravity environment measured during experiment operations, and preparation of mission summary reports aimed at furthering the PIs understanding of the microgravity environment.
- 1400 User Requests fulfilled (300 International). Annual International Micro-g Meeting, Astronaut Education for Classes & PI Interpretation Tutorials
- **Microgravity Requirement Verification** - Defend and interpret acceleration requirements for ISS.
- **Microgravity Emissions Lab**
 - Ground Based Facility to measure disturbances for all payloads on ISS. Fulfills ISS requirement to be a “good neighbor” on ISS.

All of these activities at Glenn are funded through NASA Code Ug, the Microgravity Research Program Office at MSFC and the Space Station Program Office at JSC.